

Appl. No. : **Unassigned**
Filed : **Herewith**

AMENDMENTS TO THE CLAIMS

1-20. (Canceled)

21. (New) A sensing device for sensing a specific binding between an analyte and a recognition molecule, the sensing device comprising:

a sensor comprising a micro-electronically addressable sensor surface, the sensor surface comprising a recognition molecule and an activation element selected from the group consisting of an individually addressable thermal activation element and an individually addressable electrochemical activation element, wherein the activation element is configured to activate the sensor surface, wherein the recognition molecule is covalently bound to the sensor surface, and wherein the sensor is configured to electrically detect or electrically sense a specific binding between the recognition molecule and an analyte.

22. (New) The sensing device of claim 21, wherein the sensing device is a field effect transistor.

23. (New) The sensing device of claim 21, comprising a plurality of micro-electronically individually addressable sensor surfaces, wherein each sensor surface is individually activatable.

24. (New) The sensing device of claim 21, comprising a plurality of micro-electronically individually addressable sensors.

25. (New) The sensing device of claim 21, wherein the sensor surface comprises an anchoring layer.

26. (New) The sensing device of claim 25, wherein the anchoring layer is selected from the group consisting of chemical molecules and a metal layer.

27. (New) The sensing device of claim 25, wherein the anchoring layer is activatable by electrochemical actuation.

28. (New) The sensing device of claim 21, wherein the activation element is an electrochemical activation element.

29. (New) The sensing device of claim 28, wherein the sensor surface comprises a surface layer, the surface layer comprising a material configured to allow electron transfer over the surface layer.

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30. (New) The sensing device of claim 29, wherein the material is selected from the group consisting of a metal, a thin oxide, a semiconductor, an organic layer, and combinations thereof.

31. (New) The sensing device of claim 21, wherein the activation element is a thermal activation element.

32. (New) The sensing device of claim 31, wherein the thermal activation element is selected from the group consisting of a resistor, a microwave heatable element, and a peltier element.

33. (New) A method for localized or patterned deposition or desorption of (bio)molecules onto a surface of a device using addressable structures, the method comprising adsorbing, depositing, or desorbing (bio)molecules onto the surface by electrochemical spotting.

34. (New) The method of claim 33, wherein the device is a microelectronic device and the addressable structures are addressable microelectronic structures.

35. (New) A method for sensing a binding event, the method comprising:

providing a sensing device comprising a sensor comprising a micro-electronically addressable sensor surface, the sensor surface comprising a recognition molecule and an activation element selected from the group consisting of an individually addressable thermal activation element and an individually addressable electrochemical activation element, wherein the activation element is configured to activate the sensor surface, wherein the recognition molecule is covalently bound to the sensor surface, and wherein the sensor is configured to electrically detect or electrically sense a specific binding between the recognition molecule and an analyte;

activating the sensor surface;

depositing a recognition molecule from a liquid phase or a vapour phase onto the sensor surface; and

detecting a binding event between the recognition molecule and an analyte.

36. (New) A method for depositing molecules onto a surface, the method comprising:

providing a sensing device comprising a sensor comprising a micro-electronically addressable sensor surface, the sensor surface comprising a recognition molecule and an activation element selected from the group consisting of an individually addressable

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thermal activation element and an individually addressable electrochemical activation element, wherein the activation element is configured to activate the sensor surface, wherein the recognition molecule is covalently bound to the sensor surface, and wherein the sensor is configured to electrically detect or electrically sense a specific binding between the recognition molecule and an analyte, wherein the device comprises a plurality of surfaces wherein at least one surface is individually thermally activatable;

activating the at least one surface; and

depositing molecules onto the at least one surface.

37. (New) A method as recited in claim 36, further comprising selecting at least one surface, wherein the step of selecting is followed by the step of activating.

38. (New) A method as recited in claim 36, wherein the device is a micro-electronic chip.

39. (New) A method as recited in claim 36, wherein activation is activation by laser light.

40. (New) A method as recited in claim 36, wherein the device further comprises an individually thermally activatable micro-electronic structure for activating the at least one surface.